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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,566	08/22/2003	Ik Beom Jeon	1740-000056/US	8221

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^{07/18/2007}

EXAMINER

DANIELSEN, NATHAN ANDREW

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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07/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/645,566

Applicant(s)

JEON ET AL.

Examiner

Nathan Danielsen

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-10,12-25 and 35-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-10,12-25 and 35-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2627

DETAILED ACTION

1. Claims 1-5, 7-10, 12-25 and 35-49 are pending. Claims 26-34 have been canceled in Applicant's preliminary amendment filed 03 December 2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 8, 10, 13, 18-20, 24, 25, 36-38, 40, 41, and 46-49 are rejected under 35 U.S.C. 103(a) as being obvious over Watanabe et al (International Published Application WO 02/086873 and English equivalent US Patent Application Publication 2004/0156294; hereinafter Watanabe), in view of Ueda et al (US Patent Application Publication 2001/0007545; hereinafter Ueda).

Regarding claims 1, 18, 20, and 38, Watanabe discloses a high-density recording medium (and associated methods of recording or reproducing) including one or more recording layers, the recording medium comprising:

a lead-in area including a disc information required for recording or reproducing data on or from the recording medium (§ 168 and elements 21 and 22 figure 18); and

a burst cutting area located at an inner area other than the lead-in area, the burst cutting area including a plurality of data units (§s 167-175, specifically § 168, and element 11 in figure 18; where the plurality of data units are located on different layers);

wherein the disc information includes at least medium type information that identifies a type of recording layer in the recording medium (§s 78 and 168).

However, Watanabe fails to disclose where the disc information is redundantly included in at least one of the data units.

Art Unit: 2627

In the same field of endeavor, Ueda suggests where the disc information is redundantly included in at least one of the data units (§ 58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have redundantly stored information in a lead-in are and the BCA, as taught by Ueda, for the purpose of preventing illegal regional information reinitialization (§ 58).

Regarding claim 2, Watanabe, in view of Ueda, discloses everything claimed, as applied to claim 1. Additionally, Watanabe discloses where the medium type information indicates that the recording medium is a writable medium or read-only medium (§ 78).

Regarding claim 4, Watanabe, in view of Ueda, discloses everything claimed, as applied to claim 1. Additionally, Watanabe discloses where the disc information field is recorded in a first data unit (figure 18).

Regarding claims 8, 19, and 40, Watanabe, in view of Ueda, discloses everything claimed, as applied to claims 1, 18, and 38, respectively. Additionally, Watanabe discloses where the disc information further includes layer information (§s 78 and 168).

Regarding claim 10, Watanabe, in view of Ueda, discloses everything claimed, as applied to claim 8. Additionally, Watanabe discloses where layer information represents the number of layers included in the recording medium (§ 168).

Regarding claim 13, Watanabe, in view of Ueda, discloses everything claimed, as applied to claim 1. Additionally, Watanabe discloses where the disc information includes a reflectivity information, the reflectivity information indicating the reflectivity of the recording medium (§ 78; where it is well known that read-only, writable, and rewritable layers have significantly differing reflectivities).

Regarding claims 24 and 46, Watanabe, in view of Ueda, discloses everything claimed, as applied to claims 18 and 38. Additionally, Watanabe discloses where the identifying and reading steps identify/read the information preferentially when the recording medium is loaded in a recording or reproducing apparatus (figure 20).

Regarding claims 25, 37, 47, and 48, Watanabe, in view of Ueda, discloses everything claimed, as applied to claims 18 and 38. Additionally, Watanabe discloses where the identifying step identifies the

Art Unit: 2627

information in an early stage of recording or reproducing data on or from the recording medium and at an early stage of a drive start-up procedure (figure 20).

Regarding claims 36 and 49, Watanabe, in view of Ueda, discloses everything claimed, as applied to claims 18 and 38. Additionally, Watanabe discloses where the control information in said lead-in area includes the disc information in the burst cutting area (suggested by ¶s 168 and 169).

Regarding claim 41, Watanabe, in view of Ueda, discloses everything claimed, as applied to claim 38. Additionally, Watanabe discloses processing the read information included in at least one data unit to identify the information (inherent in ¶ 78 and 168 when the various kinds of disclosed information is recorded in the BCA).

4. Claims 1, 15-18, 20, 22, 25, 36-39, 43, and 47-49 are rejected under 35 U.S.C. 103(a) as being obvious over Ueda, in view of Vining et al (US Patent 6,377,526; hereinafter Vining).

Regarding claims 1, 18, 20, and 38, Ueda discloses a high-density recording medium (and associated methods of recording or reproducing (as shown in figure 5; where method steps not explicitly stated are inherent in figure 5)) including one or more recording layers, the recording medium comprising:

a lead-in area including disc information required for recording or reproducing data on or from the recording medium (element 103 in figure 1A); and

a burst cutting area located at an inner area other than the lead-in area, the burst cutting area including a plurality of data units (figure 1B), the disc information being redundantly included in at least one of the data units (¶ 58),

wherein disc information is included in at least one data unit, the disc information including at least a medium type information (abstract).

However, Ueda fails to disclose where the medium type information identifies type of recording layer is included in the recording medium.

In the same field of endeavor, Vining discloses medium type information where one byte is dedicated to identifying the type of disk the control data has been recorded on (col. 5, lines 37-48 and col. 2, lines 37-67).

Art Unit: 2627

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used different bit/byte values in control data to indicate medium type information, as taught by Vining, for the purposes of determining the type of medium in the drive as well as to provide support and expansion capabilities for new types of media (col. 5, lines 37-48).

Regarding claims 36, and 49, Ueda, in view of Vining, discloses everything claimed, as applied to claims 18, and 38, respectively. Additionally, Ueda discloses where the control information in said lead-in area includes the disc information in the burst cutting area (abstract).

Regarding claims 15, 22, and 43, Ueda, in view of Vining, discloses everything claimed, as applied to claims 1, 18, and 38. However, Ueda fails to disclose where the medium type information represents the type of a BD-ROM (BD-Read Only memory), a BD-R (BD-Recordable), or BD-RE (BD-Rewritable).

In the same field of endeavor, Vining discloses where one byte is dedicated to identifying the type of disk the control data has been recorded on (col. 5, lines 37-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used different bit/byte values in control data to indicate medium type information, as taught by Vining, for the purposes of determining the type of medium in the drive as well as to provide support and expansion capabilities for new types of media (col. 5, lines 37-48).

Regarding claims 16 and 39, Ueda, in view of Vining, discloses everything claimed, as applied to claims 1 and 38, respectively. However, Ueda fails to disclose where the data unit comprises a plurality of information bytes, the medium type information is included in at least one information byte.

In the same field of endeavor, Vining discloses where the data unit comprises a plurality of information bytes, the medium type information is included in at least one information byte (figure 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included medium type information in at least one information byte of a plurality of control data bytes, as taught by Vining, for the purpose of identifying the type of medium in the drive (col. 5, lines 37-48).

Art Unit: 2627

Regarding claim 17, Ueda, in view of Vining, discloses everything claimed, as applied to claim 16. However, Ueda fails to disclose where the medium type information is included in the first information byte in each data unit.

In the same field of endeavor, Vining discloses a byte for indicating the medium type (figure 4). However, this byte in Vining is not the first byte of the data unit shown in figure 4. Therefore, absent criticality for including medium type information in the first information byte in each data unit, locating this information in this byte is considered to be an arrangement of data. Where certain types of descriptive material, such as arrangements or compilations of facts or data, are stored so as to be read or outputted by a computer without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer, then such descriptive material alone does not impart functionality either to the data as so structured, or to the computer. Furthermore, Haneji suggests that the exact location of this data within the plurality of data units, and thus within the BCA (PEP) area, is irrelevant as long as this data is located somewhere within the data units and is therefore reproduced prior to reproducing data from any other location on the recording medium (col. 1, lines 25-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included medium type information in at least one information byte of a plurality of control data bytes, as taught by Vining, for the purpose of identifying the type of medium in the drive (col. 5, lines 37-48). Furthermore, absent criticality for including medium type information in the first information byte in each data unit, locating this information in this particular location is considered to be a mere arrangement of data and is thus considered to be an obvious matter of design choice.

Regarding claims 25, 37, 47, and 48, Ueda, in view of Vining, discloses everything claimed, as applied to claims 18 and 38. Additionally, Ueda discloses where the identifying step identifies the information in an early stage of recording or reproducing data on or from the recording medium and at an early stage of a drive start-up procedure (¶¶s 48 and 49 and figures 4 and 5).

5. Claims 2, 13, 14, 23, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda, in view of Vining, and further in view of Haneji (US Patent 5,124,962).

Art Unit: 2627

Regarding claim 2, Ueda, in view of Vining, discloses everything claimed, as applied to claim 1. However, Ueda, in view of Vining, fails to disclose where the medium type information indicates that the recording medium is a writable medium or read-only medium.

In the same field of endeavor, Haneji discloses where the medium type information indicates that the recording medium is a writable medium or read-only medium (col. 2, lines 16-18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used control information to indicate if a recording medium is a writable or read-only type, as taught by Haneji, for the purpose of setting drive conditions of an optical disk (col. 2, lines 3-5).

Regarding claims 13, 14, 23, and 44, Ueda, in view of Vining, discloses everything claimed, as applied to claims 1, 18, and 38. However, Ueda, in view of Vining, fails to disclose where the disc information includes a reflectivity information, the reflectivity information indicating the reflectivity of the recording medium, where the reflectivity information is required for an optical power control or an automatic gain control when a data recording or reproducing operation is carried out.

In the same field of endeavor, Haneji discloses where the disc information includes a reflectivity information, the reflectivity information indicating the reflectivity of the recording medium (col. 2, lines 6-16), where the reflectivity information is required for an optical power control or an automatic gain control when a data recording or reproducing operation is carried out (col. 2, lines 6-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used control information to indicate the reflectivity of a recording medium, as taught by Haneji, for the purpose of setting drive conditions of an optical disk (col. 2, lines 3-5).

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda, in view of Vining, and further in view of Miyasaka (US Patent 4,972,399).

Regarding claim 3, Ueda, in view of Vining, discloses everything claimed, as applied to claim 1. However, Ueda, in view of Vining, fails to disclose where each data unit is preceded by sync information.

In the same field of endeavor, Miyasaka discloses where each data unit is preceded by synch information (figure 4).

Art Unit: 2627

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included sync information in the control data area, as taught by Miyasaka, for the purposes of ensuring access to and reading out of disk characteristic data (col. 1, lines 48-51).

Regarding claim 4, Ueda, in view of Vining, discloses everything claimed, as applied to claim 3. However, Ueda, in view of Vining, fails to disclose where the disc information field is recorded in a first data unit.

In the same field of endeavor, Miyasaka discloses where the disc information field is recorded in a first data unit (figure 4, where the single block of 128 data bits is considered to be the same as the claimed first data unit).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have put disc information in a first data unit, as taught by Miyasaka, for the purposes of ensuring access to and reading out of disk characteristic data (col. 1, lines 48-51).

7. Claims 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda, in view of Vining, and further in view of Ishida et al (US Patent 6,208,603; hereinafter Ishida).

Regarding claims 5 and 21, Ueda, in view of Vining, discloses everything claimed, as applied to claims 1 and 18. However, Ueda, in view of Vining, fails to disclose where the disc information is repeatedly recorded in each data unit.

In the same field of endeavor, Ishida discloses where disc information is repeatedly recorded in each data unit (col. 14, lines 53-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have recorded information in duplicate, as taught by Ishida, for the purpose of more reliably reproducing it (col. 14, line 64 through col. 15, line 33; more specifically col. 15, lines 13-15).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda, in view of Vining, and further in view of Dieleman et al (US Patent 5,341,356; hereinafter Dieleman).

Art Unit: 2627

Regarding claim 7, Ueda, in view of Vining, discloses everything claimed, as applied to claim 6. Additionally, Ueda, in view of Vining, discloses a lead-out area (element 105 in figure 1A). However, Ueda fails to disclose where the lead-out area contains control information.

In the same field of endeavor, Dieleman discloses where the lead-out area contains control information (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included control information in a lead-out area, as taught by Dieleman, for the purpose of controlling reading of the information in all of the recorded information volumes (abstract).

9. Claims 8-12, 19, 24, 35, 40, 41, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda, in view of Vining, and further in view of the Applicant's admitted prior art (hereinafter the AAPA).

Regarding claims 8, 19, and 40, Ueda, in view of Vining, discloses everything claimed, as applied to claims 1, 18, and 41. However, Ueda, in view of Vining, fails to disclose where the disc information further includes layer information.

In the same field of endeavor, the AAPA discloses where the disc information further includes layer information (page 3, lines 10-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included layer information in the disc information, for the purpose of determining which layer is the currently recorded/reproduced layer (page 3, lines 10-15) thereby to make the disk with easier access and control.

Regarding claims 9, 35, and 45, Ueda, in view of Vining and the AAPA, discloses everything claimed, as applied to claims 8, 18, and 38. However, Ueda, in view of Vining, fails to disclose where the disc information further includes a sequence number to identify a data unit.

In the same field of endeavor, the AAPA discloses where the disc information further includes a sequence number to identify a data unit (3-byte sector number information in page 2, line 4 and figure 2).

Art Unit: 2627

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included layer information in the disc information, for the purpose of identifying the sector which is the currently being recorded/reproduced (page 2, lines 2-4) thereby to make the disk with easier access and control.

Regarding claim 10, Ueda, in view of Vining and the AAPA, discloses everything claimed, as applied to claim 8. However, Ueda, in view of Vining, fails to disclose where layer information represents the number of layers included in the recording medium.

In the same field of endeavor, the AAPA discloses where layer information represents the number of layers included in the recording medium (page 3, lines 10-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included layer information in the disc information, for the purpose of determining which layer is the currently recorded/reproduced layer (page 3, lines 10-15) thereby to make the disk with easier access and control.

Regarding claim 12, Ueda, in view of Vining and the AAPA, discloses everything claimed, as applied to claim 9. Additionally, Ueda discloses where the disc information further includes an application indicator to indicate a use for a copy protection system (element 106 in figure 1B).

Regarding claims 24 and 46, Ueda, in view of Vining, discloses everything claimed, as applied to claims 18 and 38. However, Ueda fails to disclose where the identifying and reading steps identify/read the information preferentially when the recording medium is loaded in a recording or reproducing apparatus.

In the same field of endeavor, the AAPA discloses where the identifying and reading steps identify/read the information preferentially when the recording medium is loaded in a recording or reproducing apparatus (page 3, lines 16-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have read the control information first, as taught by the AAPA, for the purpose of normally carrying out a data recording or reproducing operation corresponding to the read information (page 3, lines 21-22).

Art Unit: 2627

Regarding claim 41, Ueda, in view of Vining and the AAPA, discloses everything claimed, as applied to claim 40. Additionally, Ueda discloses processing the read information included in at least one data unit to identify the information (figure 5).

10. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda, in view of Vining and the AAPA, and further in view of Ishida.

Regarding claim 42, Ueda, in view of Vining and the AAPA, discloses everything claimed, as applied to claim 41. Additionally, Ueda discloses where the processing step processes the read information included in each data unit to identify the information (figure 5). However, Ueda, in view of Vining and the AAPA, fails to disclose where the information is repeatedly included in each data unit.

In the same field of endeavor, Ishida discloses where disc information is repeatedly recorded in each data unit (col. 14, lines 53-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have recorded information in duplicate, as taught by Ishida, for the purpose of more reliably reproducing it (col. 14, line 64 through col. 15, line 33; more specifically col. 15, lines 13-15).

11. Claims 15-17, 22, 39, and 43 are rejected under 35 U.S.C. 103(a) as being obvious over Watanabe, in view of Ueda, and further in view of Vining, as explained in ¶ 4 of this Office Action.

12. Claims 14, 23, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Ueda, and further in view of Haneji, as explained in ¶ 5 of this Office Action.

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, in view of Ueda, and further in view of Miyasaka, as explained in ¶ 6 of this Office Action.

14. Claims 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, in view of Ueda, and further in view of Ishida, as explained in ¶ 7 of this Office Action.

Art Unit: 2627

15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, in view of Ueda, and further in view of Dieleman, as explained in ¶ 8 of this Office Action.

16. Claims 9, 12, 35, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, in view of Ueda, and further in view of the AAPA, as explained in ¶ 9 of this Office Action.

17. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe, in view of Ueda and the AAPA, and further in view of Ishida, as explained in ¶ 10 of this Office Action.

Response to Arguments

18. Applicant's arguments with respect to the rejection of claims 1, 18, and 38 under 35 U.S.C. § 102(a) have been considered but are moot in view of the new ground(s) of rejection.

19. Applicant's arguments with respect to the rejection of claims 1, 18, and 38 under 35 U.S.C. § 103(a) have been considered but they are not persuasive.

a. Regarding applicant's argument that the "redundant recording of disc information is [not] taught by the Ueda '545 PGPub" (page 12), the examiner disagrees. Paragraph 58 of Ueda discloses where identical control information (manufacturer initialization medium identifiers) is placed in both the BCA and the lead-in area. Therefore, the rejections using the combinations of Ueda and Vining, as well as Watanabe and Ueda, are still deemed proper and are hereby maintained.

Closing Remarks/Comments

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571) 272-4248. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:00 PM Eastern Time.

Art Unit: 2627

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathan Danielsen
06/27/2007

/Thang V. Tran/
Primary Examiner
Art Unit 2627